REMARKS

The foregoing amendment and remarks which follow are responsive to the Notice to Comply with Requirements for Patent Applications Containing Nucleotide Sequence and/or Amino Acid Sequence Disclosures mailed September 14, 2001 in relation to the above-identified patent application. As stated in such notice, Applicants were directed to provide an initial computer readable form (CFR) of the sequence listings of the peptides disclosed and claimed in the present application, as well as an amendment directing its entry into the application, as per 37 CFR 1.821-1.825. By this amendment, Applicant has submitted herewith a compact disc including the twelve (12) sequence listings disclosed and claimed in the present application in computer readable form and consistent with the requirements of 37 CFR 1.821-1.825. Applicants have further amended the specification to reference such sequence listings as provided for in the compact disc accompanying herewith, and have likewise modified the claims to reference such sequences. Applicants respectfully submit that the listings provided in the compact disc herewith do not include new matter, but merely replicate the exact sequences disclosed in the present application.

Applicants respectfully submit that they have complied with the Notice to Comply mailed September 14, 2001 and that the application is in condition for examination. Early notice to that effect is respectfully requested.

Attached hereto is a marked-up version of the changes made to the specification and claims by the current amendment. The attached page is captioned "Version with markings to show changes made". If any additional fee is required, please charge Deposit Account Number 19-4330.

To the extent the Examiner has any questions, requires additional information, or has any suggestions to expedite the resolution of any outstanding issues, the Examiner is invited to contact Applicants' counsel at the number listed below.

Respectfully submitted,

Date: 11/14/01

By: _____

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VERSION WITH MARKINGS TO SHOW CHANGES MADE

IN THE SPECIFICATION:

At Page 9, line 18, please insert the following rewritten paragraph:

According to a preferred embodiment, the antigenic peptide of the present invention comprises those amino acid residues corresponding to amino acid residues 2-12 of PTH, collectively identified as 12 in Figures 1-3. Specifically, such antigenic peptide will have the formula:

VAL-SER-GLU-ILE-GLN-X-MET-HIS-ASN-LEU-GLY

wherein X is an amino acid residue selected from either LEU [SEQ NO. 1] or PHE [SEQ NO. 2]. As will be recognized by those skilled in the art, the sixth (6th) amino acid residue of this PTH peptide fragment does differ between the cited species whereby such residue comprises LEU in humans, rats, mice and pigs, on one hand, but PHE for bovids and dogs on the other. As will be appreciated by those skilled in the art, notwithstanding the single amino acid residue difference, such antigenic peptide remains otherwise constant between the cited species which, as discussed more fully below, can enable antibodies to be prepared and ultimately utilized that are cross-reactive and, hence, effective in detecting PTH levels in a variety of such species.

On Page 10, line 6, please insert the following rewritten paragraph:

In a more highly preferred embodiment, the peptide antigen reflects the first twelve (12) amino acid residues of PTH, identified as 14, and comprises the formula:

Y-VAL-SER-GLU-ILE-GLN-X-MET-HIS-ASN-LEU-GLY wherein X is an amino acid residue selected from either LEU or PHE and Y is an amino acid residue selected from either SER

or ALA [SEQ ID NO. 3, SEQ ID NO. 4, SEQ ID NO. 5 and SEQ ID NO. 6, respectively]. With respect to the variation at the first amino acid residue, it will be readily appreciated that such antigenic peptide may be formed such that such amino acid comprises SER, as found in humans, dogs and pigs, or ALA, as found in rats, mice and bovids. In this respect, the variation provided for in the antigenic peptide in the present invention, and in particular the more highly preferred embodiments thereof, provide leeway such that the antibodies ultimately derived from such antigenic peptides may be formed to possess a higher binding affinity as may be desired to detect PTH in a given species.

On Page 10, line 19 and line 23, please insert the following rewritten paragraph:

In more highly refined embodiments of the present invention, the antigenic peptides comprise sequences that correspond to amino acid residue 2-15 and 1-15, respectively, of PTH. With regard to the former, identified in Figures 1-3 as 16, such antigenic peptide will have the formula: VAL-SER-GLU-ILE-GLN-X-MET-HIS-ASN-LEU-GLY-LYS-HIS-LEU wherein X is an amino acid residue selected from either LEU [SEQ ID NO. 7] or PHE [SEQ ID NO. 8]. With respect to the latter embodiment corresponding to amino acid residues 1-15 of PTH, identified as 10, such antigenic peptide will have the formula: Y-VAL-SER-GLU-ILE-GLN-X-MET-HIS-ASN-LEU-GLY-LYS-HIS-LEU wherein X is an amino acid residue selected from either LEU or PHE and Y is an amino acid residue selected from either SER or ALA [SEQ ID NO. 9, SEQ ID NO. 10, SEQ ID NO. 11, and SEQ ID NO. 12, respectively. A compact disc providing a computer readable form of SEQ ID NOS. 1-12 in compliance with the requirements of 37 CFR 1.821-1.825, which is identical to the written sequence listing provided herein, has been submitted to comply

with such statutory requirements]. Notwithstanding the foregoing formulas for the aforementioned antigenic peptides, it will be recognized that the same will extend to all functional derivatives thereof, which is meant to include functionally comparable peptides derived from the same region of PTH, as reflected in the sequences of Figures 1-3, and having a similar ability to induce specific anti-PTH antibodies, and more particularly antibodies specific to the N-terminal amino acid residues of PTH. In this regard, such functional derivative may be similarly positioned peptides or peptides derived from the sequences discussed above and reflected in Figures 1-3 having substitutions, additions or deletions of amino acids, provided the derivation does not alter the ability of the peptide antigen to induce antibody reactive to PTH.

IN THE CLAIMS:

Please amend the following new claims:

1. (Amended) An antigenic peptide for inducing the formation of antibodies having an affinity therefor and for isolating said antibodies, said antigenic peptide comprising ~~of the~~ a formula selected from the group consisting of SEQ ID NO. 1 and SEQ ID NO. 2.~~:~~

~~VAL-SER-GLU-ILE-GLN-X-MET-HIS-ASN-LEU-GLY~~

~~wherein X is an amino acid selected from the group consisting of LEU and PHE.~~

2. (Amended) An antigenic peptide for inducing the formation of antibodies having an affinity therefor and for isolating said antibodies, said antigenic peptide comprising a ~~the~~ formula selected from the group consisting of SEQ ID NO. 3, SEQ ID NO. 4, SEQ ID NO. 5 and SEQ ID NO. 6.~~:~~

~~Y-VAL-SER-GLU-ILE-GLN-X-MET-HIS-ASN-LEU-GLY~~

~~wherein X is an amino acid selected from the group consisting of LEU and PHE; and~~

~~wherein Y is an amino acid selected from the group consisting of SER and ALA.~~

3. (Amended) An antigenic peptide for inducing the formation of antibodies having an affinity therefor and for isolating said antibodies, said antigenic peptide comprising a ~~of the~~ formula selected from the group consisting of SEQ ID NO. 7 and SEQ ID NO. 8.~~:~~

~~VAL-SER-GLU-ILE-GLN-X-MET-HIS-ASN-LEU-GLY-LYS-HIS-LEU~~

~~wherein X is an amino acid selected from the group consisting of LEU and PHE.~~

4. (Amended) An antigenic peptide for inducing the formation of antibodies having an affinity therefor and for isolating said antibodies, said antigenic peptide comprising a ~~the~~ formula selected from the group consisting of SEQ ID NO. 9, SEQ ID NO. 10, SEQ ID NO. 11, and SEQ ID NO. 12.~~:~~

~~Y-VAL-SER-GLU-ILE-GLN-X-MET-HIS-ASN-LEU-GLY-LYS-HIS-LEU~~

~~wherein X is an amino acid selected from the group consisting of LEU and PHE; and~~

~~wherein Y is an amino acid selected from the group consisting of SER and ALA.~~

5. (Amended) A method for producing antibodies useful in the determination of PTH levels in a biological same comprising the steps:

a) providing at least one first peptide antigen, said at least one first peptide comprising a peptide fragment of PTH;

b) administering said at least one first peptide antigen to a host animal to induce antibody production against said at least one first peptide antigen in said

host animal;

c) monitoring antibody titer produced by said administration of said at least one antigen to said host animal;

d) isolating antisera produced in said host animal by said administration of said at least one peptide antigen; and

e) selecting antisera from said isolated antisera produced in said host that is capable of binding to a second peptide antigen, said second peptide antigen having a ~~the~~ formula selected from the group consisting of SEQ ID NO. 1 and SEQ ID NO. 2.~~:~~

~~VAL-SER-GLU-ILE-GLN-X-MET-HIS-ASN-LEU-GLY~~

~~wherein X is an amino acid selected from the group consisting of LEU and PHE.~~

6. (Amended) The method of Claim 5 wherein in step e), said second peptide antigen comprises a ~~the~~ formula selected from the group consisting of SEQ ID NO. 3, SEQ ID NO. 4, SEQ ID NO. 5, and SEQ ID NO. 6.~~:~~

~~Y-VAL-SER-GLU-ILE-GLN-X-MET-HIS-ASN-LEU-GLY~~

~~wherein X is an amino acid selected from the group consisting of LEU and PHE; and~~

~~wherein Y is an amino acid selected from the group consisting of SER and ALA.~~

12. The method of Claim 5 wherein in step e), said second peptide antigen comprises a ~~of the~~ formula selected from the group consisting of SEQ ID NO. 3, SEQ ID NO. 4, SEQ ID NO. 5, and SEQ ID NO. 6.~~:~~

~~VAL-SER-GLU-ILE-GLN-X-MET-HIS-ASN-LEU-GLY-LYS-HIS-LEU~~

~~wherein X is an amino acid selected from the group consisting of LEU and PHE.~~

13. The method of Claim 5 wherein in step e), said second peptide antigen comprises a ~~of the~~ formula selected from a group consisting of SEQ ID NO. 9, SEQ ID NO. 10, SEQ ID NO. 11 and SEQ ID NO.12.~~:~~

~~Y-VAL-SER-GLU-ILE-GLN-X-MET-HIS-ASN-LEU-GLY-LYS-HIS-LEU~~

~~wherein X is an amino acid selected from the group consisting of LEU and PHE; and~~

~~wherein Y is an amino acid selected from the group consisting of SER and ALA.~~

18. (Amended) The method of Claim 5 wherein in step a), said at least one peptide antigen comprises a ~~the~~ formula selected from the group consisting of SEQ ID NO. 1 and SEQ ID NO. 2.~~:~~

~~VAL-SER-GLU-ILE-GLN-X-MET-HIS-ASN-LEU-GLY~~

~~wherein X is an amino acid selected from the group consisting of LEU and PHE.~~

19. (Amended) The method of Claim 5 wherein in step a), said at least one peptide antigen comprises a ~~the~~ formula selected from the group consisting of SEQ ID NO. 3, SEQ ID NO. 4, SEQ ID NO. 5, and SEQ ID NO. 6.~~:~~

~~Y-VAL-SER-GLU-ILE-GLN-X-MET-HIS-ASN-LEU-GLY~~

~~wherein X is an amino acid selected from the group consisting of LEU and PHE; and~~

~~wherein Y is an amino acid selected from the group consisting of SER and ALA.~~

20. (Amended) The method of Claim 5 wherein in step a), said at least one peptide antigen comprises a ~~the~~ formula selected from the group consisting of SEQ ID NO. 7 and SEQ ID NO. 8.~~:~~

~~VAL-SER-GLU-ILE-GLN-X-MET-HIS-ASN-LEU-GLY-LYS-HIS-LEU,~~

~~wherein X is an amino acid selected from the group consisting of LEU and PHE.~~

21. (Amended) The method of Claim 5 wherein in step a), said at least one peptide antigen comprises a ~~the~~ formula selected from the group consisting of SEQ ID NO. 9, SEQ ID NO. 10, SEQ ID NO. 11 and SEQ ID NO. 12.~~:~~

~~Y-VAL-SER-GLU-ILE-GLN-X-MET-HIS-ASN-LEU-GLY-LYS-HIS-LEU,~~

~~wherein X is an amino acid selected from the group consisting of LEU and PHE; and~~

~~wherein Y is an amino acid selected from the group consisting of SER and ALA.~~